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IMPACT OF FINANCIAL INCLUSION ON THE GROWTH OF MICRO, SMALL, AND MEDIUM ENTERPRISES IN NIGERIA (1992-2023)

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are essential drivers of economic growth, yet they face persistent financial access constraints in Nigeria. This study investigates the impact of financial inclusion, measured through total deposits, number of bank branches, private sector credit, and interest rates, on the growth of MSMEs in Nigeria from 1992 to 2023. Using the Autoregressive Distributed Lag (ARDL) technique on annual time-series data, results show that total deposits have a statistically significant positive effect on MSME loan access, while other indicators (number of bank branches and credit to the private sector) show no significant effect. Interest rates exhibit a marginally significant effect, indicating constrained but persistent borrowing by MSMEs. The findings emphasize the role of targeted deposit mobilization strategies and inclusive financial policies. Recommendations include policy actions by the Central Bank of Nigeria to direct credit to MSMEs and enhance digital financial access.

KEYWORDS: Financial inclusion, MSMEs, ARDL, Bank branches, Nigeria.

1.0 INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have evolved significantly since the 1940s, and today they are widely recognized as pivotal contributors to economic development, employment generation, and innovation. Globally, MSMEs account for up to 90% of job creation and are considered engines of inclusive growth (SME Finance Forum, 2017). However, despite their economic relevance, many MSMEs, particularly in developing countries, remain constrained by limited access to formal financing mechanisms. An estimated funding gap of $5.2 trillion affects approximately 65 million MSMEs annually in

emerging markets (SME Finance Forum/IFC, 2017). These persistent financing barriers have placed financial inclusion at the center of global policy discussions, with development institutions such as the World Bank, the G20, and the IMF emphasizing the need for more inclusive financial systems (Ogbonlaiye et al., 2025).

In the Nigerian context, MSMEs play a critical role in economic transformation, accounting for approximately 86% of employment and contributing nearly 50% of the nation's Gross Domestic Product (GDP) (World Bank, 2024). Despite this contribution, MSMEs in Nigeria experience severe credit constraints, as the financial system remains shallow. Domestic credit to the private sector is under 10% of GDP, far below the Sub-Saharan African average of 45%. The International Finance Corporation estimates a credit deficit of over ₦13 trillion for Nigerian MSMEs. The situation deteriorated further after the removal of statutory lending quotas in the mid-1990s, which saw commercial bank loans to small businesses plummet from 49% in 1992 to just 3% by 2005 (World Bank Group/IFC, 2022).

In response to these challenges, Nigerian policymakers have implemented a range of financial inclusion initiatives aimed at enhancing MSME access to finance. Early strategies included rural banking programs, interest rate concessions, and credit guarantee schemes. More recent efforts, such as the 2005 Microfinance Policy, the 2012 National Financial Inclusion Strategy, and the ₦220 billion MSME Development Fund launched in 2013 by the Central Bank of Nigeria (CBN), have aimed to integrate more enterprises into the formal financial system (George-Anokwuru & Okowa, 2021; Handayani & Abubakar, 2020). These policies were designed to reduce credit barriers and foster enterprise growth by expanding deposit mobilization and improving financial infrastructure.

The theoretical rationale behind these interventions is grounded in the role of financial inclusion as a catalyst for capital mobilization, investment, and productivity growth. Empirical studies suggest that greater deposit mobilization enhances the loanable funds available for MSMEs, while an expanded branch network increases geographic access to credit (Arifin & Sawitri, 2019; Nwagwu et al., 2021). Likewise, increased credit to the private sector and favorable interest rates can stimulate enterprise investment. Despite the relevance of these mechanisms, empirical evidence on their effectiveness in the Nigerian MSME context remains mixed and inconclusive.

Against this backdrop, this study investigates the long- and short-term effects of financial inclusion on the growth of MSMEs in Nigeria from 1992 to 2023. The study proxies MSME growth by commercial banks' loans to small-scale enterprises (MSMEG) and analyzes how key indicators, total deposits, number of bank branches, credit to the private sector, and interest rates have influenced credit allocation to MSMEs. By employing the Autoregressive Distributed Lag (ARDL) model, this research seeks to offer robust insights into the dynamic interplay between financial inclusion and MSME development over the past three decades.

2.0 LITERATURE REVIEW

2.1 Conceptual Clarifications

Financial Inclusion

Financial inclusion is widely understood as the access to and use of formal financial services by all segments of society, especially underserved and marginalized populations (Pesqué-Cela et al., 2021; World Bank, 2022). For MSMEs, financial inclusion entails the availability of banking services such as loans, savings, insurance, and digital payments that can facilitate business expansion and risk management. Beck et al. (2007) assert that financial inclusion reduces income inequality and enhances efficient capital allocation. In the Nigerian context, financial exclusion remains a major bottleneck for MSME development, as many enterprises operate outside the formal banking system (Maity & Sahu, 2024; Owolabi & Nasiru, 2017).

Total Deposits

Deposits in financial institutions serve as a critical source of funds for credit creation. They reflect public confidence in the banking system and underpin financial intermediation activities (Muhammad & Ngele, 2023). A robust deposit base enhances a bank's ability to issue loans, particularly to small businesses (Adegbesan, 2021; Ozili, 2024). Iwedi (2024) emphasizes that higher deposit mobilization reduces reliance on external borrowing, thereby making credit more affordable and accessible to MSMEs.

Number of Bank Branches

The number of bank branches is a traditional metric of financial outreach and access. A wider branch network is associated with better geographic coverage, especially in rural and peri-urban areas (Ilori & Ilori, 2025). Beck et al. (2007) note that branch proliferation fosters trust and physical access to financial services. However, Efobi et al. (2016) argue that in countries with low digital penetration like Nigeria, physical banking infrastructure remains vital for enterprise inclusion.

Total Credit to the Private Sector

Total credit to the private sector (TCP) is a measure of the extent to which banks lend to households and firms. It is often used to gauge the financial depth and maturity of an economy (Ozili, 2024). Empirical studies show that increasing credit to the private sector is positively correlated with enterprise productivity and profitability (Dong et al., 2023). Nonetheless, MSMEs often receive a disproportionately small share due to higher perceived risk and limited collateral (Ibor et al., 2017).

Interest Rates

Interest rates play a crucial role in determining the cost of capital for enterprises. High rates can restrict credit uptake, especially for capital-constrained MSMEs (Msomi, 2023; Oluwole, 2023). In Nigeria, where the benchmark lending rate reached 18.5% in 2023, borrowing costs are a major barrier for small businesses (Muhammad & Ngele, 2023). While some MSMEs continue to borrow despite high costs due to limited alternatives, sustained high rates are unsustainable for long-term growth (Flaminiano & Francisco, 2021).

Micro, Small, and Medium Enterprises (MSMEs)

MSMEs are generally defined by their size, asset base, and employee strength. In Nigeria, the National Bureau of Statistics and SMEDAN (2018) define MSMEs as businesses with fewer than 200 employees and assets below ₦500 million. These enterprises contribute approximately 50% to GDP and 86% to total employment (PwC, 2020). However, they remain financially underserved and face significant structural challenges, including access to credit, infrastructure deficits, and policy instability (Efobi et al., 2016; Ibor et al., 2017).

2.2 Theoretical Framework

This study is grounded in the Financial Intermediation Theory, originally proposed by Joseph Schumpeter (1911), which posits that financial institutions serve as intermediaries between savers and borrowers, facilitating capital flows that promote innovation and economic development. Schumpeter argued that banks enable entrepreneurs to access credit for productive investments, thereby driving industrial and economic progress.

Gurley and Shaw (1960) later extended this theory by formalizing the functions of financial intermediaries in reducing transaction costs and resolving information asymmetries. This framework underpins the role of banks in mobilizing deposits, channeling credit, and expanding financial access.

In the context of MSMEs in Nigeria, financial inclusion initiatives, such as deposit mobilization, branch expansion, credit facilitation, and interest rate stabilization, can be viewed as mechanisms that strengthen the financial intermediation process. Recent studies like Maity and Sahu (2024) reinforce the relevance of this theory, highlighting how improved financial access enables enterprise growth and economic diversification.

2.3 Empirical Literature

Recent empirical studies have examined the nexus between financial inclusion and MSME development both globally and within Nigeria, employing diverse methodologies. For instance, Omeje et al. (2024) used OLS regression on Nigeria Enterprise Survey data and found that while financial inclusion marginally improved MSME growth, environmental constraints such as inadequate infrastructure and corruption remained significant barriers.

Hardika et al. (2024) employed Structural Equation Modeling – Partial Least Squares (SEM-PLS) to study Indonesian enterprises and found that financial literacy acts as a mediating factor, enhancing both financial inclusion and enterprise performance.

In Nigeria, Ilori et al. (2023) used survey-based analysis to demonstrate that loan inaccessibility is primarily due to information asymmetry and procedural complexities in formal financial institutions. Mapac et al. (2024) adopted a policy review and descriptive approach, identifying infrastructure and financing bottlenecks as key constraints to MSME development.

Awe and Omoniyi (2023) used panel regression techniques to show that while microfinance institutions positively affect MSME performance, strict loan conditions undermine repayment and growth potential.

Conversely, Saskia et al. (2023) found through a quantitative survey study that although financial literacy improved MSME performance, financial inclusion had no significant direct effect. Similarly, Onu and Okonkwo (2021) reported using regression analysis that financial inclusion indicators showed no statistically significant impact on MSME development in Nigeria, calling for digital innovation to enhance outreach.

Peter and Okpebru (2020) employed an ARDL (Autoregressive Distributed Lag) model and found that financial access indicators such as rural deposits and pension fund mobilization had positive effects on SME financing. Likewise, Akpunonu (2021), using time-series

regression analysis, emphasized that credit access was significantly influenced by the depth of financial inclusion.

However, studies like Raimi and Uzodinma (2019) and Owolabi and Nasiru (2017) noted that despite system-wide credit expansion, MSMEs remain largely excluded from mainstream financial services, citing institutional rigidities and lack of tailored financial products.

Taken together, these findings underscore that while financial inclusion can support MSME growth, its effectiveness varies by context, policy environment, and delivery mechanisms.

2.4 Literature Gap

Despite extensive studies on financial inclusion and enterprise growth, few longitudinal analyses spanning over three decades exist for Nigeria. Most prior studies either rely on cross-sectional data, focus on short-run effects, or are confined to specific geopolitical zones. Moreover, much of the empirical literature emphasizes general credit expansion without disaggregating its effects on MSMEs. This study fills that gap by employing an Autoregressive Distributed Lag (ARDL) approach using data from 1992 to 2023 to capture both short- and long-term dynamics. By focusing explicitly on MSMEs and incorporating deposit mobilization, branch expansion, private credit, and interest rates, this research offers a more comprehensive and time-sensitive assessment of financial inclusion's role in enterprise development.

3.0 METHODOLOGY

3.1 Research Design

This study adopts an ex-post facto research design to examine the relationship between financial inclusion indicators and the growth of Micro, Small, and Medium Enterprises (MSMEs) in Nigeria over the period 1992–2023. Secondary annual time-series data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2024 edition). This design is appropriate as it allows the researcher to analyze past data without manipulating variables, in line with standard econometric practices for macro-financial studies.

3.2 Model Specification

The model used in this study is based on the Financial Intermediation Theory, modified from Adegboyegun et al. (2020), who applied an ARDL framework to investigate financial inclusion and economic growth in Nigeria. The initial form of the model is represented as:

$$GDP_t = \alpha_0 + \alpha_1 LRA_t + \alpha_2 DRA_t + \alpha_3 BNBR_t + \alpha_4 INTR_t + \epsilon_t \quad (1)$$

For this study, the model is adapted to examine MSME growth, with the dependent variable represented by commercial banks' loans to MSMEs (MSMEG). The independent variables are total deposits (DEP), number of bank branches (NOB), total credit to the private sector (TCP), and interest rate (IR). The modified linear form is:

$$MSMEG_t = \beta_0 + \beta_1 DEP_t + \beta_2 NOB_t + \beta_3 TCP_t + \beta_4 IR_t + \mu_t \quad (2)$$

To account for both short-run and long-run dynamics, the Autoregressive Distributed Lag (ARDL) model is specified as:

$$\Delta MSMEG = \beta_0 + \sum_{g=1}^{i} \beta_{1i} \Delta MSMEG_{t-i} + \sum_{h=1}^{j} \beta_{2i} \Delta DEP_{t-i} + \sum_{i=1}^{k} \beta_{3i} \Delta NOP_{t-i} + \sum_{j=1}^{l} \beta_{4i} \Delta \mathrm{TCP}_{t-i} + \sum_{k=1}^{m} \beta_{5i} \Delta IR_{t-i} + ECM_{t-i} + e_t \quad (3)$$

Where Δ denotes the first-difference operator, and ECT_{t-1} is the error correction term derived from the cointegrating equation, capturing the speed of adjustment toward long-run equilibrium. The ARDL structure is suitable due to the mixed order of integration of the variables (I(0) and I(1)).

3.3 Variable Definition

Table 3.1 presents the operational definitions, measurement units, data sources, and a priori expectations of the variables used in the model.

Table 3.1: Description of Variables and Expected Signs

Variable	Description	Measurement	Source	A Priori Expectation
MSMEG Dependent	Growth of MSMEs, proxied By commercial banks' loans To small-scale enterprises.	₦ Billion	CBN, 2024	
DEP	Total deposits in financial Institutions.	₦ Billion	CBN, 2024	$\beta_1>0$
NOB	Number of commercial bank branches nationwide.	count	CBN, 2024	$\beta_2>0$
TCP	Commercial banks' total credit To the private sector.	₦ Billion	CBN, 2024	$\beta_3>0$
IR	Average lending interest rate.	Percentage (%)	CBN, 2024	$\beta_4>0$

Source: CBN,2024

These variables capture key aspects of financial inclusion and are consistent with existing empirical studies on MSME financing in developing economies.

3.4 Estimation Technique

The study employs the Autoregressive Distributed Lag (ARDL) bounds testing approach, as developed by Pesaran et al. (2001), to estimate both the long-run and short-run relationships between financial inclusion indicators and MSME growth. This technique is appropriate given the mixed integration order of the variables (I(0) and I(1)) and the relatively small sample size (32 observations). The ARDL model has the advantage of providing unbiased and efficient estimates in the presence of serial correlation and endogeneity among regressors.

To assess cointegration, the bounds test is applied to determine the existence of a long-run relationship. Upon confirmation of cointegration, the Error Correction Model (ECM) is estimated to measure the speed of adjustment from short-run disequilibrium to long-run equilibrium. Diagnostic checks such as the Breusch-Godfrey test (for autocorrelation), the Breusch-Pagan-Godfrey test (for heteroscedasticity), and the Jarque-Bera test (for normality of residuals) are also conducted to validate model assumptions.

4. RESULTS AND DISCUSSION

This section presents and interprets the empirical findings of the study, including the results of descriptive statistics, correlation matrix, stationarity tests, ARDL bounds testing for cointegration, long-run and short-run model estimates, and post-estimation diagnostics.

4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics of Variables (1992–2023)

Variable	Mean	Median	Std. Dev.	Min	Max	Skewness	Kurtosis	Jarque-Bera (p-value)
MSMEG (₦ bn)	41.32	40.97	29.43	10.75	123.93	0.99	3.30	0.070
DEP (₦ bn)	99.40	17.67	170.01	0.02	670.33	1.87	5.59	0.000
NOB	3974.03	4318.50	1454.34	2023.00	5809.00	-0.10	1.27	0.133
TCP (₦ bn)	8442.65	6310.05	9288.83	75.46	39293.15	1.28	4.76	0.002
IR(%)	17.80	17.58	3.57	11.48	29.80	1.05	5.67	0.000

Source: Author's computation using EViews 12

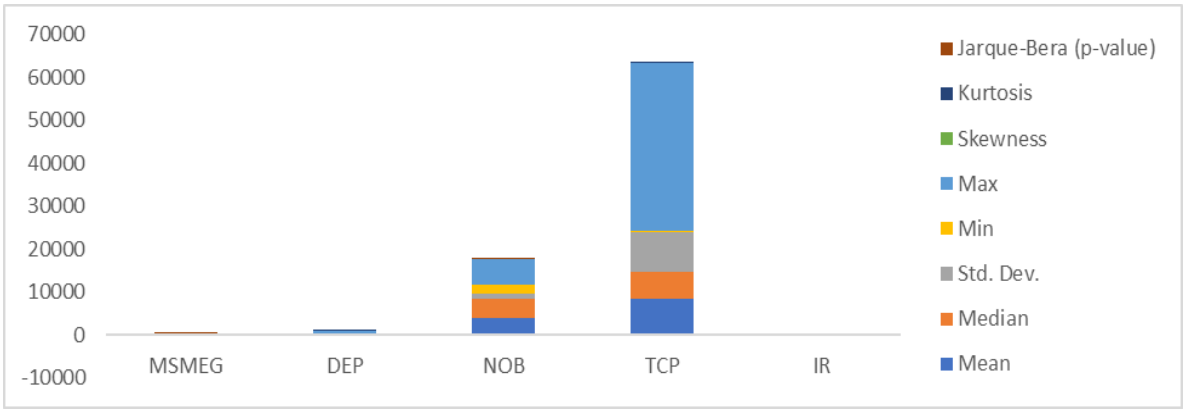

Figure 4.1: Trend of Commercial Bank Loans to MSMEs in Nigeria (1992–2023).

The descriptive statistics reveal substantial variation across years in commercial banks' loans to MSMEs (MSMEG), total deposits (DEP), and total credit to the private sector (TCP). High standard deviations and skewed distributions for these variables indicate periods of sharp fluctuations, particularly in deposits and private credit. The Jarque-Bera test confirms that several variables (DEP, TCP, IR) deviate significantly from normality, underscoring the importance of using robust time series estimation techniques such as ARDL.

4.2 Correlation Matrix

Table 4.2: Pearson Correlation Matrix.

Variable	MSMEG	DEP	NOB	TCP	IR
MSMEG	1.000	0.614**	-0.167	0.288	-0.169
DEP		1.000	0.337	0.816**	-0.513**
NOB			1.000	0.703**	-0.532**
TCP				1.000	-0.604**
IR					1.000

Note: *Significant at 1% level. Source: Author's computation using EViews 12*

Figure 4.2: Correlation Heatmap of Financial Inclusion Variables.

The correlation analysis shows a strong and statistically significant positive relationship between MSMEG and total deposits ($r = 0.614$, $p < 0.01$), affirming the theoretical expectation that higher deposit mobilization enhances loanable funds for MSMEs. However, the number of bank branches, total credit to the private sector, and interest rates show weak and statistically insignificant correlations with MSMEG, suggesting that other structural or institutional factors may limit the transmission of these variables into MSME credit access.

4.3 Unit Root Tests

Table 4.3: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variable	ADF Test Statistic	5% Critical Value	Order of Integration
MSMEG	-6.9677	-2.9640	I(1)
DEP	-4.7003	-3.5684	I(1)
NOB	-3.9217	-2.9640	I(1)
TCP	-3.0125	-2.9640	I(1)
IR	-4.6859	-2.9604	I(0)

Source: Author's computation using EViews 12

The results show a mix of stationarity: all variables are stationary at first difference (I(1)), except interest rate (IR), which is stationary at level (I(0)). This validates the suitability of the ARDL modeling framework, which allows for a combination of I(0) and I(1) regressors.

4.4 ARDL Bounds Test for Cointegration

Table 4.4: ARDL Bounds Test Results

Test Statistic	Value
F-Statistic	4,4850
K(Number of regression)	4

Critical Value Bounds (Pesaran et al., 2001):

Significance Level	I(0) Bound	I(1) Bound
10%	2.20	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Source: Author's computation using EViews 12

Since the computed F-statistic (4.4850) exceeds the 5% upper bound (3.49), we reject the null hypothesis of no long-run relationship. This confirms the presence of cointegration between MSMEG and the financial inclusion variables, justifying further estimation of long-run and short-run dynamics.

4.5 ARDL Long-Run and Short-Run Estimates

Table 4.5: ARDL Long-Run Estimates

Variable	Coefficient	Std.Error	t-Statisti	p-value
DEP	0.2898	0.0827	3.506	0.0029**
NOB	-0.0058	0.0084	-0.687	0.5022
TCP	0.0008	0.0028	0.284	0.7798
IR	3.5004	1.8017	1.943	0.0699**

Table 4.5b: Short-Run Error Correction Model

Variable	Coefficient	Std. Error	t-Statisti	p-value
D(NOB)	0.0319	0.0077	4.144	0.0008**
D(TCP)	-0.0029	0.0010	-2.842	0.0118**
D(TCP(-1)	-0.0136	0.0021	-6.481	0.0000*
CointEq(-1)	-0.8800	0.1481	-5.943	0.0000**

Source: Author's computation using EViews 12

*Significant at 10%; **Significant at 5%*

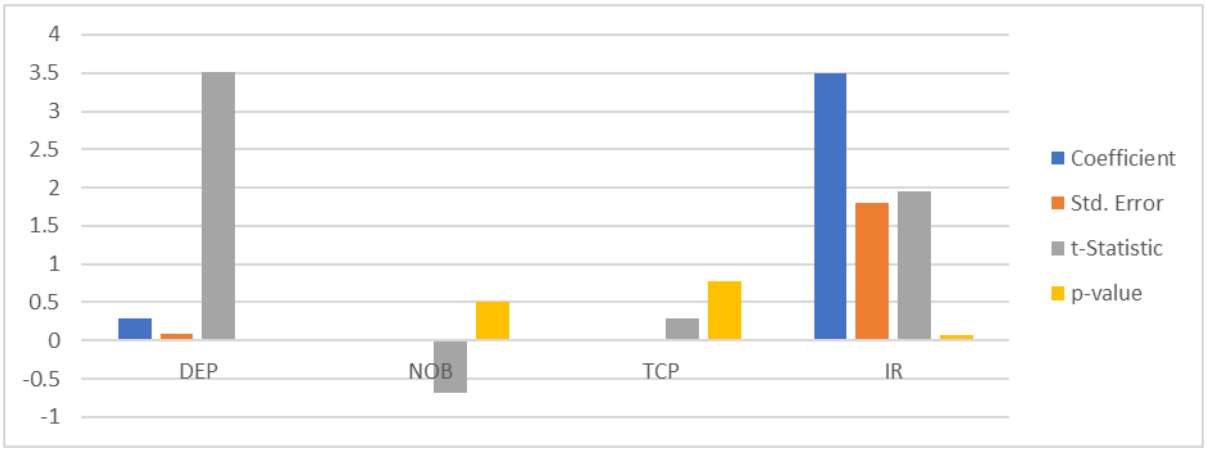

Figure 4.3: Short-Run and Long-Run Coefficient Plots from ARDL Model.

In the long run, total deposits (DEP) exert a statistically significant positive effect on MSME growth (MSMEG), confirming that deposit mobilization enhances loanable funds available to small businesses. Interestingly, the interest rate (IR) variable shows a positive and marginally significant coefficient (p = 0.0699), which appears counterintuitive to theoretical expectations. Typically, higher interest rates discourage borrowing due to increased capital

costs. However, this result may reflect the reality that many MSMEs in Nigeria lack access to alternative financing options and are therefore compelled to borrow at prevailing market rates despite their unfavorable nature. This suggests that high-interest rates may not entirely suppress MSME borrowing, particularly when enterprises face urgent working capital or operational needs.

Conversely, the number of bank branches (NOB) and total credit to the private sector (TCP) show statistically insignificant long-run effects on MSMEG. This could be attributed to structural and institutional constraints within Nigeria's financial system. For instance, although an increase in bank branches may suggest greater financial reach, many MSMEs remain excluded due to rigid loan requirements, lack of collateral, or poor credit histories. Similarly, aggregate credit expansion to the private sector does not necessarily translate into increased MSME financing, as commercial banks often prefer lending to larger, low-risk clients. These findings underscore the need for targeted credit policies and specialized financial products that are tailored to the risk profile and operational realities of MSMEs, rather than relying solely on broad financial deepening indicators.

4.6 Post-estimation Diagnostics

Table 4.6: ARDL Diagnostic Tests

Diagnostic Test	Statistic	p-value	inference
Breusch-Godfrey Serial Correlation LM Test.	F = 1.275	0.3099	No autocorrelation
Breusch-Pagan-Godfrey heteroscedasticity Heteroscedasticity Test.	F = 2.307	0.0600	No strong
Jarque-Bera Normality Test	JB = 1.325	0.5155	Residuals are normally distributed

Source: Author's computation using EViews 12

These diagnostic results confirm the validity of the model: residuals are independent, homoscedastic, and normally distributed. The absence of specification errors strengthens confidence in the robustness of the ARDL model estimates.

5.0 CONCLUSION AND POLICY IMPLICATIONS

5.1 Conclusion

This study examined the long- and short-run effects of financial inclusion on the growth of Micro, Small, and Medium Enterprises (MSMEs) in Nigeria from 1992 to 2023, using

commercial banks' loans to MSMEs (MSMEG) as the proxy for MSME growth. Employing the Autoregressive Distributed Lag (ARDL) model, the analysis revealed that total deposits in financial institutions exert a strong and statistically significant positive influence on credit allocation to MSMEs. This underscores the critical role of deposit mobilization in increasing the loanable funds that banks can channel toward small business development.

Conversely, the number of bank branches and total credit to the private sector showed statistically insignificant effects on MSME lending in the long run, suggesting that mere financial infrastructure expansion or broad credit growth does not necessarily translate into improved access for small businesses. While interest rates demonstrated a weak positive relationship with MSME loans, the finding may reflect forced credit demand due to the lack of alternative funding sources, rather than a healthy financial climate.

These findings highlight the importance of targeted and inclusive financial policies that go beyond structural indicators and directly address the financing needs of MSMEs.

5.2 Policy Implications

Based on the empirical findings, the following policy recommendations are proposed to enhance the role of financial inclusion in MSME development:

1. **Strengthen Deposit Mobilization Policies**

The Central Bank of Nigeria (CBN), in collaboration with commercial banks, fintech companies, and mobile money operators, should prioritize financial literacy campaigns and expand rural banking initiatives to enhance deposit mobilization. This could involve deepening agency banking networks, deploying mobile savings platforms, and incentivizing low-income depositors through interest rebates or micro-savings programs. A broader deposit base would enhance liquidity in the financial system, enabling increased credit allocation to MSMEs.

2. **Mandate MSME-Specific Credit Quotas**

Regulatory bodies should establish enforceable credit allocation thresholds requiring commercial banks and licensed microfinance institutions to dedicate a defined percentage of private-sector credit exclusively to MSMEs. To ensure compliance, performance-based incentives and sanctions can be instituted. Additionally, development finance institutions and donor agencies should support blended finance schemes and credit guarantee facilities that de-risk MSME lending.

3. Promote Interest Rate Stability and Concessionary Lending

Monetary authorities should adopt a policy mix that ensures a stable and predictable interest rate environment. Specialized intervention funds such as the MSME Development Fund (MSMEDF) and Bank of Industry (BOI) schemes should be scaled up and made more accessible through digital channels. Donor-supported programs can also be used to provide concessionary loans and capacity building for small business operators.

4. Enhance Digital Financial Access and Mitigate Associated Risks

Rather than focusing solely on expanding physical bank branches, financial inclusion strategies should pivot toward mobile and digital financial services. Investments in digital wallets, mobile loan applications, and credit scoring algorithms using alternative data can reduce geographic and procedural barriers. Fintech startups and telecom operators should be incentivized to build inclusive platforms tailored to MSMEs.

However, policymakers must also address emerging risks associated with digital finance, including over-indebtedness, data privacy concerns, and rising cases of digital fraud. Regulatory frameworks must ensure consumer protection, promote transparency in digital lending, and strengthen cybersecurity infrastructure.

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